

MARK SCHEME

GCSE

BIOLOGY

AQA - COMBINED SCIENCE

B 1 - TEST 1

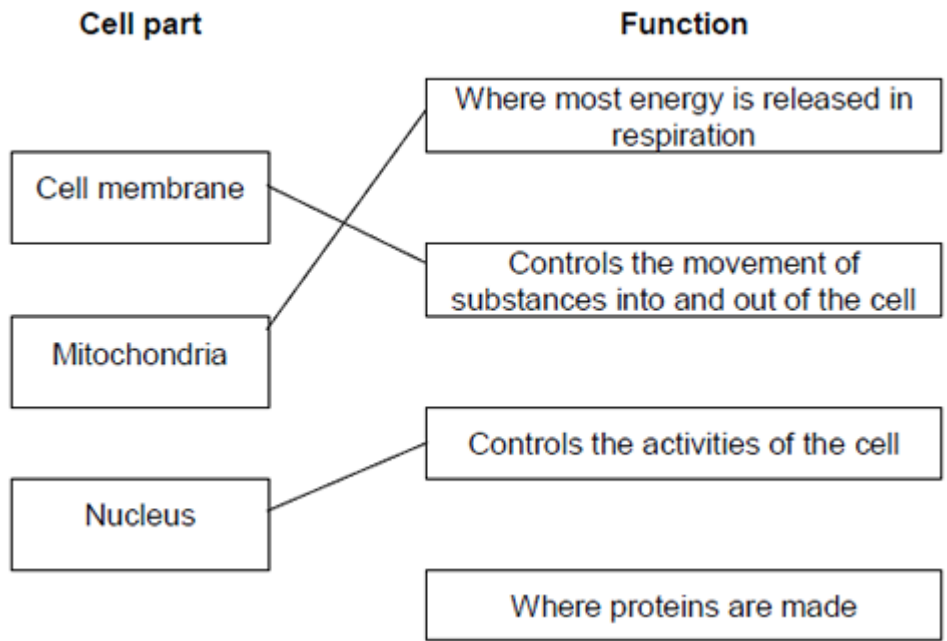
CELL BIOLOGY

Beginner

Mark schemes

1.

(a)



extra lines cancel

3

(b) Cell wall

in either order

1

Chloroplast

allow (permanent) vacuole

1

[5]

2.

(a) A

1

(b) (i) diffusion

1

(ii) respiration

1

(iii) mitochondria

1

(iv) photosynthesis

1

[5]

3.

(a) osmosis

1

partially permeable

1

(b) (i) any **two** from:

allow correct answers in terms of A

- vacuole is small(er)
- cytoplasm has shrunk
allow cytoplasm is smaller
- gap between cytoplasm and cell wall
- cell wall curves inwards
allow cell B is flaccid or cell A is turgid
- the (cell) membrane has moved away from the wall

2

(ii) any **one** from:

- water will move / diffuse in
- (cells) will swell
- (cells) will burst
ignore turgid

1

(c) villi give the small intestines a large surface area

1

villi have many blood capillaries

1

[7]

4.

(a) (i) A = cytoplasm

1

B = (cell) membrane

1

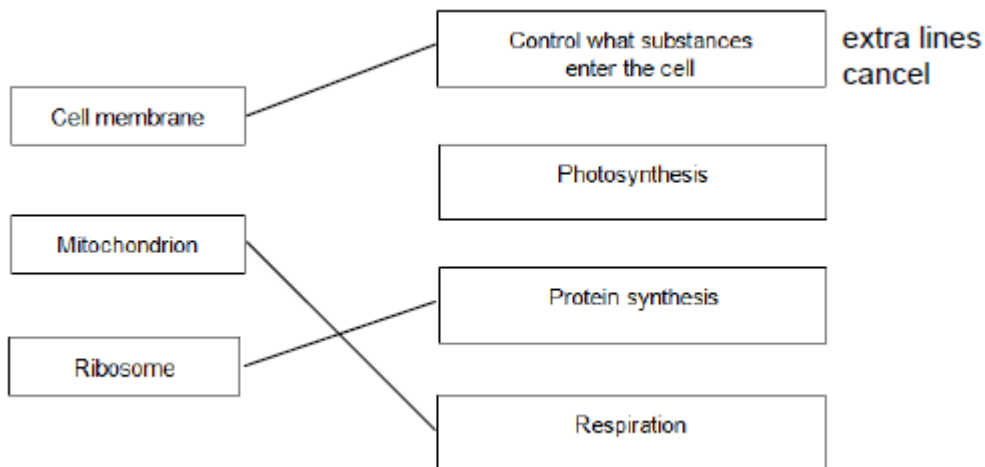
(ii) nucleus

accept chromosome / DNA / genes

accept phonetic

1

(b)



3

[6]

5.

(a) B

1

(b) D

1

(c) A

1

[3]

6.

(a) (i) A = nucleus

1

B = (cell) membrane

1

(ii) any **two** from:

ignore shape

- no (cell) wall
- no (large / permanent) vacuole
- no chloroplasts / chlorophyll

2

(b) because high to low oxygen / concentration **or** down gradient

allow 'more / a lot of oxygen molecules outside'

ignore along / across gradient

1

(c) a tissue

1

[6]

- 7.** (a) (i) **C and D**
no mark if more than one box is ticked 1
- (ii) any **one** from:
do not allow if other cell parts are given in a list
- (have) cell wall(s)
 - (have) vacuole(s)
- 1
- (b) (i) **A**
apply list principle 1
- (ii) **D**
apply list principle 1
- (c) respiration
apply list principle 1
- [5]**

- 8.** (a) root hair 1
- (b) (i) 85
if incorrect unit added = 0 1
- (ii) 0.85
ignore working or lack of working
accept correct answer from candidate's (i) for 2 marks
- $\frac{85}{100}$ *gains 1 mark*
with no answer or wrong answer
- accept ecf* 2

- (iii) absorb more water / ions
allow 'get / collect / take in / take up / soak up / suck up' for absorb
allow 'lots' for more
allow 'moisture' for water
allow 'minerals / salts / nutrients' for ions
*do **not** allow food or named foods*
absorb water / ions gains 1 mark

or

large surface area to absorb water / ions (2)
large surface area linked to incorrect function = 1
ignore small so short diffusion pathway

2

[6]

9.

- (a) (i) A cytoplasm
accept clear indications

1

B nucleus

1

- (ii) any **two** from:
two required for 1 mark

- P
- R
- T

accept lower case letters

1

- (b) sperm cells need a lot of energy to swim

1

[4]

10.

- (a) (i) diffusion
apply list principle

1

- (ii) **A**
apply list principle

1

- (b) (i) osmosis
apply list principle

1

(ii) R
apply list principle

1

[4]

11.

(a) (i) A – (cell) wall

1

B – cytoplasm

1

C – plasmid

1

(ii) bacterium cell has cell wall / no nucleus / no mitochondria / plasmids present
accept its DNA / genetic material is not enclosed / it has no nuclear membrane
it = bacterium cell
accept converse for animal cell
ignore flagella

1

(iii) any **one** from:

- chloroplast
ignore chlorophyll
- (permanent) vacuole

1

(b) (Long tail) moves the sperm / allows the sperm to swim

1

towards the egg

allow correct reference to other named parts of the female reproductive system

1

(Mitochondria) release energy (for movement / swimming)

allow supply / produce / provide

1

in respiration

1

[9]

12.

- (a) (i) water / H₂O
accept oxygen
allow H₂O
*do **not** allow H²O or H2O* 1
- (ii) the mineral ions are absorbed by active transport 1

the absorption of mineral ions needs energy 1
- (iii) have (many root) hairs 1

(which) give a large surface area (for absorption) 1
- (b) carbon dioxide in
or
oxygen out
or
control water loss

accept gas exchange
ignore gases in and out
ignore gain / lose water 1
- (c) (i) guard cells 1
- (ii) (stomata are) closed
allow there is no gap / space 1
- (iii) plant will wilt / droop
ignore die 1

[9]